

IN THE CLAIMS

Please further amend the claims as shown below in the complete listing of claims.

1. (Currently Amended) An engine transition test instrument comprising:
 - a virtual engine tester for simulating a transition state of a virtual engine in which a rotational speed or torque of the virtual engine changes with time,
 - wherein the virtual engine tester comprises
 - a simulator for simulating the behavior of the virtual engine by a transition engine model based on data obtained by driving an actual engine while changing a value of at least one controlled factor;
 - a virtual controller that emulates an actual controller that controls the actual engine, and supplies an engine control signal to the simulator; and
 - a control value operation ~~means~~ unit for supplying a control value for the controlled factor to the virtual controller causing simulation results by the simulator to be displayed on a display means, wherein
 - the control value operation ~~means~~ unit causes the control value used for the simulation to be displayed in a time-series graph on the display means along with the simulation results, ~~and~~
 - the control value operation ~~means~~ unit updates the control value displayed in the graph ~~according in response~~ to a point-and-drag operation by an operator to obtain a new control value, and
 - the point-and-drag operation includes specifying a range to be altered in the time-series graph, and specifying an extent of alteration to be done for the control value within said range to be altered.

2. (Previously Presented) The engine transition test instrument according to claim 1, further comprising:

a means for conducting a transition test on the actual engine using the new control value;
and

a means for updating the transition engine model in the simulator based on test results by the means for conducting the transition test.

3. (Canceled)

4. (Previously Presented) The engine transition test instrument according to claim 1, wherein the control value operation means causes a target value for the simulation by the simulator to be displayed on the display means in parallel with the simulation results.

5. (Previously Presented) The engine transition test instrument according to claim 1, wherein with respect to the portion in which the difference between the simulation results and a target value exceeds a permissible limit, the control value operation means causes the simulation results to be displayed in a display pattern different from that for other portions.

6. (Previously Presented) The engine transition test instrument according to claim 1, wherein with respect to the control value that corresponds to a portion in which the difference between the simulation results and a target value exceeds a permissible limit, the control value operation means causes the control value to be displayed in a display pattern different from that for other portions.

7. (Previously Presented) The engine transition test instrument according to claim 1, wherein the control value operation means divides simulation time into time slits of a unit period of time, and causes the time slit in which an integrated value of the difference between the simulation

results and a target value exceeds a threshold value to be displayed in a display pattern different from that for the other time slits.

8. (Currently Amended) An engine transition test method comprising:

a first step of creating a transition engine model as a virtual engine created based on data obtained by driving an actual engine while changing a value of at least one controlled factor in a transition state in which an engine rotational speed or torque changes with time,

a second step of displaying a control value for the controlled factor for operating the virtual engine;

a third step of emulating an actual controller that controls an actual engine and supplying an engine control signal to the virtual engine based on the control value;

a fourth step of displaying simulation results of operating the virtual engine according to the engine control signal; and

a fifth step of correcting the control value according to the displayed simulation results, wherein

the second through the fifth steps are repeated until the simulation results satisfy a performance objective,

the control value is displayed in a time-series graph in the second step,

the simulation results are displayed in parallel with the graph display of the control value in the fourth step, and

an operator updates the control value displayed in the graph ~~according~~ in response to a point-and drag operation to obtain a new control value in the fifth step, and

the point-and-drag operation includes specifying a range to be altered in the time-series graph, and specifying an extent of alteration to be done for the control value within said range to be altered.

9. (Previously Presented) The engine transition test method according to claim 8, further comprising:

a sixth step of providing the control value, with which a performance objective has been satisfied, by repeating the second through the fifth steps to control the actual engine, and conducting an actual transition test on the actual engine; and

a seventh step of updating the transition engine model based on results of the transition test,

wherein the second through the fifth steps are repeated with the updated transition engine model.

10. (Canceled)

11. (Previously Presented) The engine transition test method according to claim 8, wherein in the second step or the fourth step, a target value for the simulation is displayed in parallel with the simulation results in the fourth step.

12. (Previously Presented) The engine transition test method according to claim 8, wherein in the fourth step, with respect to a portion in which the difference between the simulation results and a target value exceeds a permissible limit, the simulation results of that portion are displayed in a display pattern different from that for other portions.

13. (Previously Presented) The engine transition test method according to claim 8, wherein in the fourth step, the control value corresponding to a portion in which the difference between the simulation results and a target value exceeds a permissible limit is displayed in a display pattern different from that for other portions.

14. (Previously Presented) The engine transition test method according to claim 8, wherein in the fourth step, a simulation time is divided into time slits of a unit period of time, and a time slit in which an integrated value of the difference between the simulation results and a target value exceeds a threshold value is displayed in a display pattern different from that for the other time slits.

15. (Currently Amended) A computer readable medium having instructions for causing an information processing system to operate:

a simulator for simulating the behavior of a virtual engine by a transition engine model based on data obtained by driving an actual engine while changing a value of at least one controlled factor;

a virtual controller that emulates an actual controller that controls the actual engine, and supplies an engine control signal to the simulator;

a control value operation ~~means~~ unit that supplies a control value for a controlled factor to the virtual controller, that causes simulation results by the simulator to be displayed on a display screen, wherein

the control value used for the simulation is displayed in a time-series graph on the display means along with the simulation results, and

the control value operation ~~means~~ unit updates the control value displayed in the graph ~~according~~ in response to a point-and drag operation by an operator to obtain a new control value, and

the point-and-drag operation includes specifying a range to be altered in the time-series graph, and specifying an extent of alteration to be done for the control value within said range to be altered.

16. (Canceled)

17. (New) The engine test instrument according to claim 1, wherein alteration of the control value comprises increasing or decreasing the control value within the range to be altered.

18. (New) The engine test method according to claim 8, wherein alteration of the control value comprises increasing or decreasing the control value within the range to be altered.

19. (New) The computer readable medium according to claim 15, wherein alteration of the control value comprises increasing or decreasing the control value within the range to be altered.